



Mirror Development
Technology Days 2013
In the
Government

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Welcome

Old Business

- On-Line Repositories

New Business

- Tech Days 2014 location

- Tech Days 2015 location

Important Information

- Coffee Breaks, Lunch and Receptions

- Photograph

Announcements

- ITAR Sessions

- Public Release Approvals

- Any Agenda Changes

- JWST Tours

- Exhibitors

- Sponsors



Purpose of Tech Days

Mirror Technology is critical for NASA & DoD missions.

Topics discussed enable missions for next 10 to 20 yrs.

Tech Days has two Goals:

How are we Spending the Taxpayer's money

1. Is the Government Investing the Taxpayer's money wisely
Are we funding 5 good ideas or 1 good idea 5 times?
2. Are we getting good value for our investment?
3. How can we coordinate our activities to maximize the efficacy of our investments.

Provide a networking opportunity for Vendors and Government.



Thank You and Acknowledgements

Organizing Committee

Dr. Petar Arsenovic, NASA
Goddard Space Flight Center

Hans-Peter Dumm, US Air Force
Research Lab, Space Vehicles
Directorate

Dr. Carol R. Lewis, Jet Propulsion
Laboratory

Dr. Larry Matson, U.S. Air Force
Research Laboratory, Material
Directorate

Dr. H. Philip Stahl, NASA
Marshall Space Flight Center

Optical Society of Southern California (OSSC):

Lisa Belodoff
Dr. Martin Hagenbuechle
Scott Rowe

Northrop-Grumman

Dr. Ronald Polidan

SPIE

Marilyn Gorsuch
Linda Warren



Technology Days 2012





Tech Day Reserve Fund

Tech Days 2012 added \$5680 surplus to Reserve Fund

Net increase was \$2355 (5680 – 2700 – 525 – 100)

Reserve Fund has two functions:

Backstop Meeting Financial Risk

Altruistic Activities

2012/13 Altruism:

\$ 2360	Rochester Photonics Cluster (pre-2012 deposit)
\$ 525	Best Optics Science Fair Project Student Awards
\$ 2700	North Alabama Optics Apprenticeship Program
\$ 100	Boy Scout National Jamboree Engineering MB



North Alabama Optics Apprenticeship Program

NAOAP Goals:

Provide real-world experience for talented students.

Develop laboratory practices and methods.

Help academia prepare a well educated work force.

Introduce optical science and engineering as a possible career path.

Establish early employment opportunities.

NAOAP Program:

\$1350 Scholarship

Personal Mentor

End of Summer Oral Research Report

Applicants must be between the ages of 16-21.



NAOAP 2013

Jessica Scout Gregory

Senior, Rose-Hulman Institute of Technology
Physics and Mathematics

Plans graduate school in biophysics.

Mentor: Dr. Tommy Cantey, Optical Sciences Corporation.

Jessica assisted in designing and conducting experiments for the growth of cryo-deposited water formations in a small vacuum chamber.





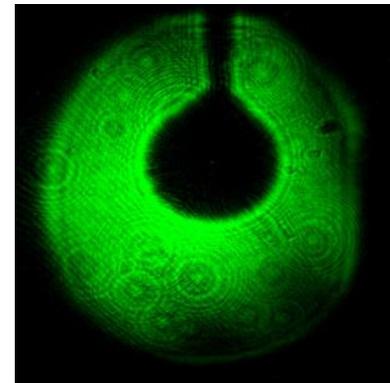
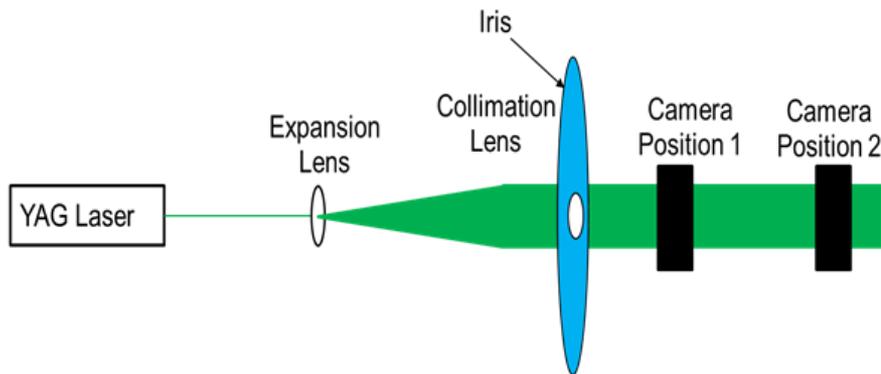
NAOAP 2013

Ash Nanda

Senior, Grissom High School

Mentor: Richard Kephart with DMS Technology, Inc.

Ash co-aligned, collimated and tested a visible laser to a high power doubled Nd:YAG laser.





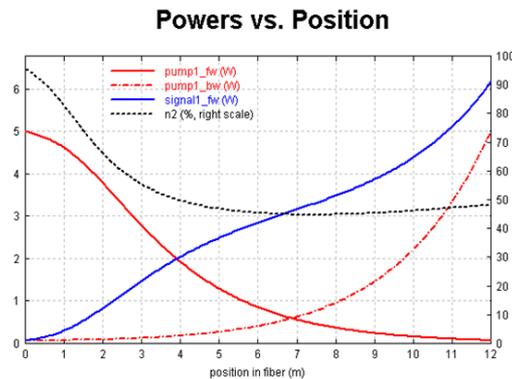
NAOAP 2013

Joseph Lee

Junior, St. Peter's Academy

Mentor: Dr. Tommy Cantey at Optical Sciences Corporation

Joseph developed a simulation for fiber amplifiers and lasers that could be used for high peak power pulsed laser sources.

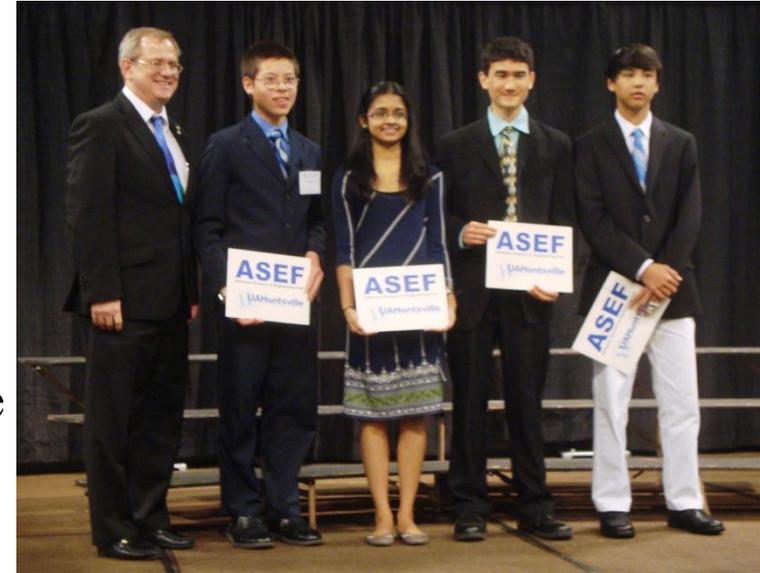




Alabama State Science and Engineering Fair

Senior Division

- 1st Award of \$200: Joseph Patrick Lee, 10th grade; “Development of a Long Life Solid State Dye Laser”.
- 2nd Award of \$150: Lakshmi Raju, 12th grade; “Novel pulsed LED excitation device for optical mapping of transmembrane potential in cardiac muscle”.
- 3rd Award of \$100: Galen Lee, 9th grade; “Solar Funnel Cooler: Potential Source of Refrigeration/Cooling for Undeveloped Areas”.
- 4th Award of \$50: Peter Kim, 10th grade; “Development of an Integrating Sphere for Characterizing Light Bulbs”.





2013 Alabama State Science Fair Senior Division 1st Award \$200

Joseph Patrick Lee,
10th grader at St. Peter's Academy

“Development of Long Life Solid State Dye Laser”.

Built a solid dye laser by mixing dye with epoxy to make a solid cylindrical dye cell. Then mounted the dye cell in a rotary DC motor to avoid depletion zone effects. Filed for a patent. Used the flowing gas nitrogen TEA laser built last year from a strip of aluminum and PVC pipe.

This is 4rd year we've recognized a project by Joseph
At ISEF, Joseph Lee received a 2nd place recognition
in the Physics Category and \$1500.

Joseph received 1st in Regional





2013 Alabama State Science Fair Senior Division 2nd Award \$150

Lakshmi Raju

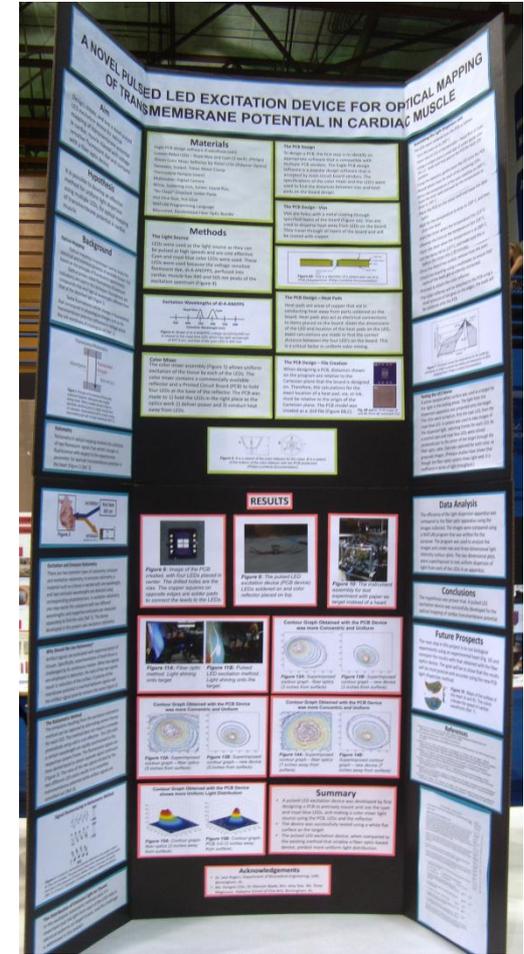
12th Grade, Alabama School of Fine Arts

“Novel pulsed LED excitation device for optical mapping of transmembrane potential in cardiac muscle”.

Used a pulsed two color LED to study the use of fluorescence dye in cardiac muscle.

This is 3rd year we've recognized a project by Lakshmi

She will be studying Electrical Engineering at Georgia Tech in the fall.





2013 Alabama State Science Fair Senior Division 3rd Award \$100

Galen Lee,
9th grader Holy Spirit Catholic Regional School

“Solar Funnel Cooler: Potential Source of
Refrigeration/Cooling for Undeveloped Areas”.

Galen used radiative cooling of a reflector to the
night sky to make ice.



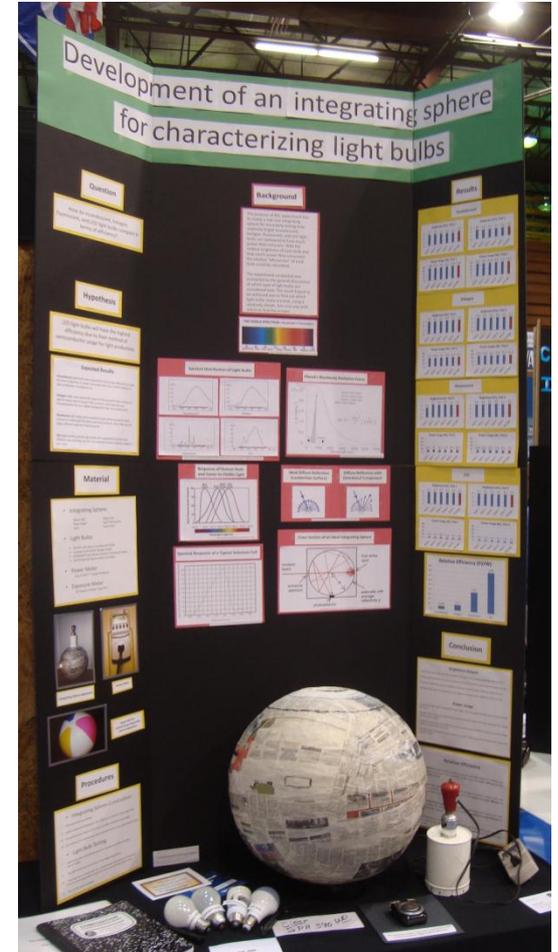


2013 Alabama State Science Fair Senior Division 4th Award \$50

Peter Kim,
10th grader, Covenant Christian Academy

“Development of an Integrating Sphere for
Characterizing Light Bulbs”.

Peter made an integrating sphere by covering a beach ball with paper mache and coating the inside with white paint.





Alabama State Science and Engineering Fair

Junior Division

1st Award, \$125: Rupa Palanki, 8th grade;
“Berry Power: Analysis of Dye-Sensitized
Solar Cells Using Berry Extracts”.

2nd Award of \$100: Timothy Brown, 8th
grade; “Focusing on the Efficiency of
Paraboloids”.

3rd Award of \$75: Lucas Lynn, 7th grade;
“Angle Management: Are Multi-Angled
Solar Panels More Efficient?”

4th Award of \$50: Aarthi Namasivayam, 8th
grade; “Reducing Reflections”.





Thank You